SAFETY AND BUILDINGS DIVISION
Plumbing Product Review
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Wisconsin
Department of Commerce

Jim Doyle, Governor
Jack L. Fischer, A.I.A., Secretary

August 6, 2008

HYDRO INTERNATIONAL
JOHN MACKINNON
94 HUTCHINS DR
PORTLAND ME 04102

Re: Description: STORMWATER TREATMENT DEVICE
Manufacturer: HYDRO INTERNATIONAL
Product Name: FIRST DEFENSE[R]
Model Number(s): 4-FT.
[VORTEX SEPARATOR FOR STORMWATER TREATMENT; SIZED AT MAX. FLOW RATE OF 6.0 GPM; 18 IN. DIA. MAX. INLET/OUTLET PIPES; FOR USE IN NEW AND RETROFIT APPLICATIONS]
Product File No: 20080323

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of August 2013.**

This approval is contingent upon compliance with the following stipulation(s):

- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.

- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.

- This product is approved for the following uses, as specified in Table Comm 82.70-1:
  - Stormwater and clearwater subsurface detention system,
  - Stormwater and clearwater subsurface infiltration system, or
  - Stormwater and clearwater subsurface detention/infiltration system

- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.

- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. **Each site-specific installation shall be submitted for review and include acceptable methods, modeling, or analysis to predict efficiency for TSS and oil & grease removal.**

- When this product is installed in other than a Hydro International manhole riser/catch basin, a department-approved precast concrete manhole riser meeting the design criteria for this product, as specified by Hydro International, is required.

- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.

- This submittal applies to First Defense® Vortex Separators installed in manhole risers/catch basins meeting chs. Comm 82 and 84 and with inlet grates and water tightness in conformance with s. Comm 82.34 (17).

- Inspection and maintenance of this product must be performed at intervals specified by the manufacturer (First Defense□, ver. 1.0, 5/13/2008) or in accordance plan approval or s. Comm 82.21, whichever is more restrictive. During the first year of operation, inspections are to be scheduled every 6 months; thereafter, inspections to be scheudeld on an annual basis or as determined by site-specific rate of pollutant contaminants.

- When this product is installed in a plumbing stormwater or clearwater plan, the installation must be in accordance with the manufacturer's printed First Defense® Installation (ver. 1.0, 5/13/2008) ch. Comm 82, plan approval under s. Comm 82.20 and product approval stipulations. When there is a conflict between manufacturer's installation instructions and plan approval or product approval stipulations, the plan approval or product approval stipulations will take precedence.

- Labeling: This product shall be permanently labeled identifying the manufacturer and model number (Hydro International, First Defense® serial no. and US Patent No.). Labeling occurs on the heavy duty cover as an affixed metal plate; the manhole cover has recessed letter noting manufacturer's name.

- **Maximum storage capacity: total sediment storage—202 gallons; sump storage—1.0 cubic yards; oil storage—180 gallons.**
  Maximum flow rates: design flow—0.7 cfs; treatment flow—6.0 cfs; peak siphonic bypass—6.0 cfs; head loss—7.0 inches.

- Absorbent pads may be installed to enhance oil and grease removal and storage; removal efficiencies must be predicted using acceptable modeling and methods.

- When access is required for inspection, cleaning and maintenance, manholes shall be a minimum of 24 inches diameter.

- **Any plumbing plans that include this device(s) and submitted to Commerce shall be accompanied by an acceptable modeling method, such as outlined in Method for Predicting the Efficiency of Proprietary Storm Water Sedimentation Devices (1006) for the specific site where the installation of this device(s) is planned. The submitted calculations, based on site-specific inputs, shall predict the removal efficiencies by concentration and percentage. For particle size distribution, in SLAMM use file: NURP.cpz.**
  For a copy of this standard, see:
  http://dnr.wi.gov/runoff/pdf/stormwater/techstds/prop_devices_std_v2_051408.pdf

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

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